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SURVIVAL

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THE HONOURABLE L. C. HALMRAST
MINISTER

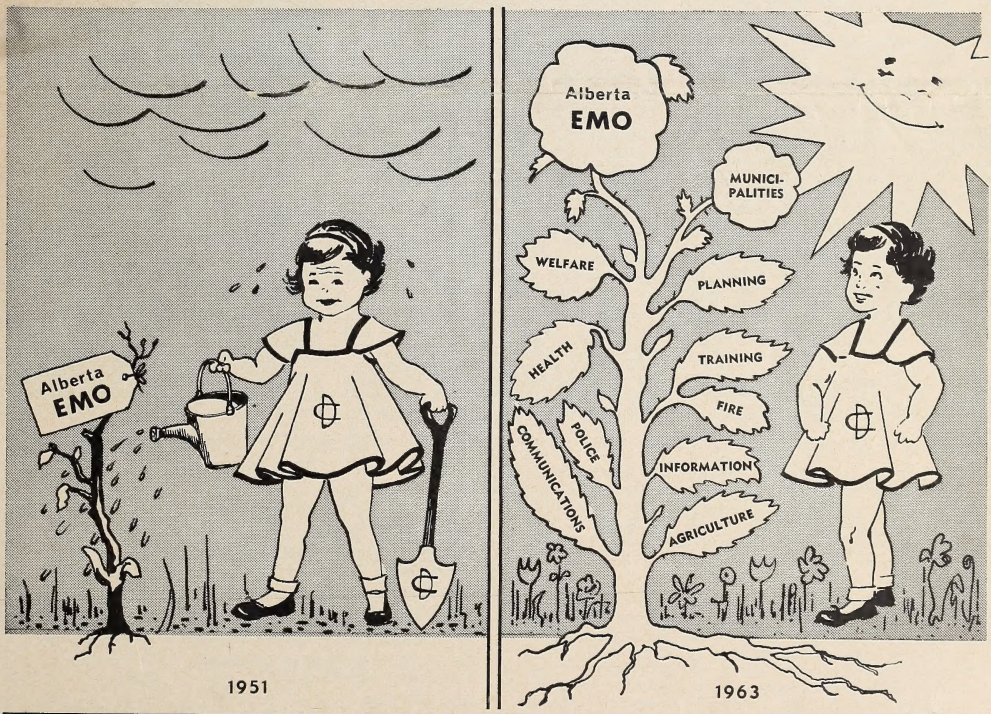
VOLUME 1, NUMBER 7

MARCH 1963

ARNOLD J. LAVOIE
CO-ORDINATOR

APR 1 1963

MARY MARY, C.D. MARY, SEE HOW YOUR GARDEN GREW!



ALBERTA EMERGENCY MEASURES ORGANIZATION

WEATHER OR NOT

Condensed from an article What Can I Do? by Director of Civil Defence for Medicine Hat, A. H. (Archie) Mitchell, which appeared in The Medicine Hat News on Friday, February 15.

When Charles Dudley Warner, late in the last century, wrote: "Everyone talks about the weather, but nobody does anything about it" he made a most untrue and misleading statement. All through the ages man has had to adapt himself, his behavior, his dress, shelter and activities to cope with the weather.

In the Malay peninsula people build their houses on stilts to keep from drowning during monsoon rains. Eskimos build igloos of snow to break the cold wind and concentrate the heat. Buildings in earthquake areas are specially constructed. People who live in hurricane belts have certain proceedures to follow when they receive warnings of a storm. In Canada we do not think of long underwear and block heaters as emergency measures, we take them for granted paying little attention to their importance in our survival.

It is true that man cannot alter the seasons or the forces which make weather conditions, climate and natural disaster. He survives by accommodating himself to live with, or in spite of them. Similarly the prevention of wars is beyond his individual capacity to influence greatly. Why not learn from our experience with the weather? Men will never be without the weather and it may be a long time before he is free of the threat of a thermonuclear war. Why not apply the same industry and intelligence to survival in spite of the bomb as we do to survival in spite of the weather?

This is just what the government did when it set up the Emergency Measures and Civil Defence organizations, but we have to use the provisions to get benefit from them. We are not compelled to use the all-weather roads or postal services provided by the government, but we do so because they help us to live better. The same is true of Civil Defence, if we use it, it will save countless lives in a war disaster emergency.

Development and progress in planning and providing for such emergencies as nuclear war take time, and a lot is done before it begins to show. The federal and provincial Emergency Measures Organizations and Civil Defence at the municipal level are concentrating on plans for saving lives and protecting the health of the people should such a disaster ever occur. These detailed plans are to ensure the survival of people and their institutions and to guide the country's wartime activity and post-war recovery, at every level. Alberta's provincial planning is well advanced with many plans completed. The larger cities are at various stages of plan development and personnel training, and the municipalities are being urged to plan to play their part in the overall scheme.

All this planning is simply to save people from perishing in a war disaster emergency, to urge people to prudently see that they have a place for their families which is reasonably safe from fallout radiation, a battery radio, and a supply of food and necessaries readily available for a short period of confinement. Some people are taking these vital steps, the rest are probably being fooled by that old "Everybody's talking . . . nobody's doing" foolishness.

There is no law that compels you to wear an overcoat when it is cold and there will not likely be any law which will compel you to build a fallout shelter or produce a family survival plan. There is no law which compels you to provide a shelter for your family against rain, the need is obvious. You take your own emergency measures against discomfort and danger of weather conditions. Why not accept the same responsibility for protection against the danger of radioactive fallout?

For those who would like to do something more than talk about Civil Defence, there are instruction booklets available free of charge. Read and follow the suggestions made in "11 Steps to Survival", "Your Basement Shelter", "Simplified Shelters", and "Your Emergency Pack" and see that your family knows the meaning of the warning signals. When you have these simple preparations made, there will never be cause for panic or confusion in your family.

HIGH PRAIRIE COURSE

Mayor Max Vanderaegen, left, presents a certificate to Councillor Lyle Carson following a recent Civil Defence Orientation Course at High Prairie. The course was held two evenings a week for a month and 13 students, including one man who travelled 50 miles each way to attend, earned certificates. Deputy C.D. Director, W. J. Smith mentions the splendid support he received from everyone he called on for assistance, and singles out for special praise the mayor, council, control committee, Corporal Kelsberg, R.C.M.P, District Agriculturist, Ed Dobko, Mr. H. A. Blakie, Mr. G. E. Gray, Mr. G. Grintals and Zone Officer Sam Dunbar, who demonstrated radiac instruments.

Survival is published monthly by Alberta Emergency Measures. In addition to publishing articles which reflect Provincial Government policy, Survival may also publish items by private individuals on subjects of current interest. The views of such contributors are not necessarily subscribed to by the goveernment.

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CONTENTS

Weather or Not by Archie Mitchell 2
High Prairie Course 2
Biological Agents in Future Wars by Dr. E. J. Bowmer 3
Demographic Facets of a Nuclear War—Part 4 4
Sir Winston Churchill on Civil Defence 5
An Introduction to Disaster Nursing 6
Alberta Region Survival Conference, Pictures and Story 7
Blitz of Pieces 8

BIOLOGICAL AGENTS IN FUTURE WARS

By DR. ERNEST J. BOWMER, M.C., Director, Provincial Division of Laboratories, British Columbia

Condensed from the September 1962 issue of The Canadian Sanitarian. Reprinted with permission from the RCAF College Journal, Armour Heights, Toronto.

In this era of nuclear weapons, little is being heard of biological weapons which can be described as living organisms or their poisonous products which can cause death, disability or damage to men, animals or plants.

Such can be produced and delivered in bulk and might be used to destroy an enemy's will to resist without permanently damaging the material resources of his country. Man would probably be the main target, his will to resist could be affected by attacks on his food supply, but our main concern is the possibility of an attack on man himself.

Agents which may be used include pathogenic bacteria, viruses, rickettsiae, fungi and toxins (the poisonous products of living bacteria). They must be readily grown in bulk quantities, must remain stable after prolonged storage and be infective and able to cause disability to man after dispersal at the target area. Organisms which meet these requirements include: the bacteria causing anthrax, brucellosis or undulant fever, plague and tularaemia; the viruses and rickettsiae responsible for ornithosis-psittacocis or parrot fever, Q fever, typhus fever (the jail fever of history which is spread by lice), yellow fever; and under specific circumstances the toxins causing botulism, a rare form of food poisoning, and tetanus or lock jaw. Most, but not all, of these organisms belong to a large group of communicable diseases called zoonoses because they are naturally transmitted between vertebrate animals and man.

The most effective method of distribution for agents of this kind is through the airborne route with the substance being inhaled and after incubation period, which depends on the dosage and virulence, respiratory or generalized disease develops. Other important routes of infection are by the oral route in which food, milk or water contaminated by pathogenic or toxic agents is swallowed; by the bites of insects infected with the agent; or by accidental infection of technicians working in laboratories handling pathogenic organisms. very small particles measuring no more than two to five thousandths of a millimetre in diameter are inhaled deeply into the lung bed and are therefore more likely to cause infection than larger particles which are filtered out in the nose. An astute aggressor might use two respiratory agents at the same time, thus producing unexpected diseases in those exposed.

The great plagues, pestilences and pandemics which have afflicted man throughout history give some idea of the effect of biological agents on an unprepared population. Communicable diseases have often influenced the outcome of military campaigns. In the disruption following a nuclear attack with resulting population movements, survivors, healthy or injured, will require accommodation and feeding in rural communities which may have undergone a fourfold increase in population. Inevitably, personal and community hygiene and sanitation will suffer, and there will be an ideal opportunity for the spread of the common endemic communicable diseases throughout the crowded communities. So, in addition to the threat of biological warfare proper, we must be prepared for a considerable increase in naturally occurring epidemic disease.

Three methods of delivery have been investigated: as aerosols, by covert methods, and by the bites of infected insects. Aerosols are invisible, tasteless and odorless clouds containing very small particles of the biological agent. Studies have shown that Q fever and tularaemia have been induced in man following the inhalation of as few as ten organisms. Larger doses shorten the incubation period and cause more severe illness. Animals can also be infected by aerosol delivery methods.

Sprays, bombs and shells are satisfactory for delivering biological agents. In one field trial a harmless agent, when sprayed from a small naval craft operating a few miles off shore, was recovered from an area of 100 square miles in concentrations adequate to ensure exposure, and was identified 23 miles from the source. In another trial a cloud containing very small particles of a fluorescent material was released from a ship travelling for 156 miles along a course 10 miles off shore. These particles were detected 450 miles inland and over an area of 23,000 square miles. Thus aerosols can be distributed on a continental scale by marine or aircraft.

The second method of delivery is covert contamination of water, of food supplies or of the air of selected buildings. A saboteur could contaminate a water supply system and introduce a biological agent into a food processing plant or dairy. This would be a small scale but satisfactory type of attack.

The third method is the use of arthropod vectors. It is not easy however to breed millions of mosquitoes, to infect them with a suitable agent, and then to distribute them at the right time to a target area. This is not a likely method of dissemination.

A novel approach to biological warfare would require new pathogenic agents, but there are great difficulties in producing such organisms. We will therefore probably be required to identify already familiar organisms and diseases at unusual times in unusual places and numbers.

The warning system of public health, veterinary and agricultural departments at local, provincial and national levels is already in existence. Individual officials are required to notify certain diseases to their local authorities.

(Continued on page six)

USE OF INFECTED INSECTS IS NOT LIKELY . . .

(Saturday Evening Post)

DEMOGRAPHIC FACETS OF A NUCLEAR WAR

Condensed from a long paper based on findings determined by the use of 14 specially designed computers by Dr. Joseph D. Coker, Ph.D., Director of the National Resource Evaluation Centre, U.S.A. LAST OF FOUR PARTS. (Emphasis of bold face type is ours.)

AFTER THE ATTACK

Let me say emphatically that the post attack environment will not be anything like that depicted in Neville Shute's "On the Beach". It will be bad enough; but by no means hopeless.

Let us look at the physical environment. During the first few days large areas will be scourged by raging fires which will burn themselves out, and by high levels of radiation, which will decay. In vast areas people will be forced to remain in the best available shelter for at least two days and in many places, for two weeks. In some areas of unusually high density of radiation, residents emerging from shelter will have to evacuate or decontaminate. Such areas might represent less than 2% of our total land area but might include over half our pre-attack population. Surface burst weapons will leave huge craters surrounded by many square miles of devastation. Radiation in the crater areas will persist at dangerous levels for many months, and may lead to the abandonment of these areas by any productive use. In metropolitan areas this will necessarily be awkward.

In many areas there will be difficult problems of survival after direct attacks are largely over. There may be shortages of food, temporary problems of sanitation and water, and lesser problems of housing. For many weeks there will be tremendous problems of caring for the sick and injured, complicated by serious deficiences of some medical supplies.

Such very thin evidence as is available suggests that there will be some temporary but serious disturbances in the balance of nature. Certain types of plant life have been found to be more vulnerable to radiation than others. Many types of small animals, comparitively vulnerable to radiation, virtually disappeared from one forest area involved in experiments. Insects, on the other hand, being relatively invulnerable and being rid of preying animals, were observed increasing in numbers.

Post-attack institutional environment will depend on the continuity, resourcefulness and general effectiveness of leadership and the survival and resilience of pre-attack institutions, public and private. Some of our leaders will perish, others will fail to meet their responsibilities, but history suggests that, where necessary, new leadership will emerge. Some institutions will undergo unpredictable changes, those which prove unadaptable will be replaced—for better or worse.

The more complete and realistic our pre-attack planning and preparations have been, the more effective the government at all levels, in inspiring and retaining the confidence of the people, the less drastic these changes will be. Much has already been done to develop the ground work for the continuity of government and for effective management and utilization of surviving resources. **Let us make it clear, however, that there remains much to be done in the various areas of emergency planning—at local levels as well as within the federal government and among private and public institutions.**

Let us examine briefly some other facets of the post-attack economic environment. Per capita wealth in material terms may or may not be reduced by the attack. Unless shelter conditions improve, the country will lose population roughly in proportion to losses in industrial plant capacity. If on the other hand, large numbers of people are saved by improved shelter, the surviving plant capacity will be spread more thinly among them. Even so, when one considers that much of our industry operates on a one-shift basis, plus the technical competence of our managerial and labour force, one must conclude that our industrial economy can be rather rapidly restored. This is not to say that there will be no difficult problems of industrial imbalance, problems of shortage among certain occupational skills, acute problems in restoring communications, electric power transmission and transportation services, and most important of all, problems of overall coordination and integration of the recovery process.

Notwithstanding the bleak picture one must draw, few of the analysts who have studied carefully the post-attack and recovery problems take any stock in the oft repeated theory that "the survivors will envy the dead". On the contrary, after a very rought year or two, the surviving population, if it choses, can begin to enjoy the advantages and physical environment of a social structure not so very different from that which prevailed before the attack.

The long-range effects of radiation are subject to much less understanding and certainty than the short term effects. There is some evidence that increased radiation exposure results in reduced life expectancy and increased incidence of leukemia and various degenerative diseases. Others have estimated that every roentgen a child receives reduces his life span by about two days. Adults are said to be aged somewhat less by radiation.

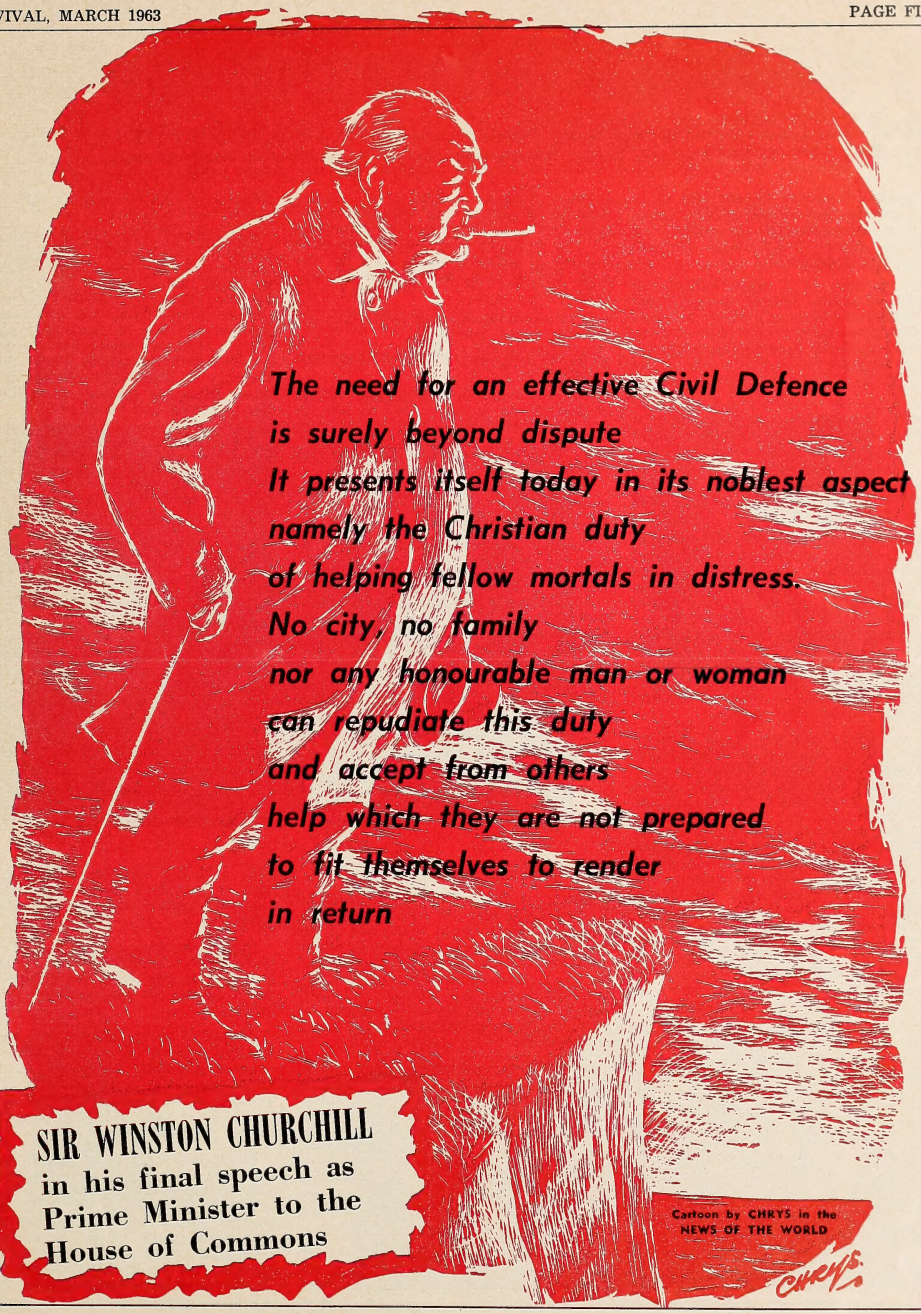
Genetic effects are more controversial. Studies of Hiroshima and Nagasaki are thus far inconclusive. Effects estimates are, however, available. One such estimate is that the exposure of both parents to 1,000 roentgens will increase the probability of a harmfully affected child due to dominant mutations from about 8% to 12%. Such mutations are seldom manifested through serious malformation in the immediate offspring, instead they spread through reduced fertility and other ramifications into many subsequent generations. Recent experiments with animals indicates that genetic damage is directly proportional to the cumulative dose, that there is no biological recovery from such damage as is established with respect to recovery from immediate radiation sickness.

Other long term effects involve radioactive isotopes with unusually long half lives, including strontium-90 and cesium-137. Strontium, being chemically similar to and biologically indistinguishable from calcium, is taken into the body and becomes incorporated in bone structure. If the strontium is radioactive, the resulting radiation continuously bombards nearby bone, blood and other cells, occasionally causing bone cancer and leukemia. Cesium-137 is believed to be less dangerous.

The post-attack behaviour of the population is an area of major uncertainty with many unanswered questions. Will parents, separated from each other and their children enter the nearest shelter and remain there for a reasonable time, or will they invite sickness or death by trying to reach the school or some rendezvous point in premature efforts to reunite? When and how will workers whose families are missing respond to urgent job requirements? How can we develop realistic measures of post-attack labour productivity? Can these be confidently related to circumstances in the post-attack setting?

There are also uncertainties about the relative urgency of providing for the population's present, versus future needs. How much short-term self-denial will the people accept as a price for the acceleration of recovery?

Let me close by expressing my hope that my account of nuclear war in the demographic context and my necessarily superficial description of government response to the task of emergency planning will encourage you to dig into some of the exceedingly difficult problems related to our task.


The need for an effective Civil Defence
is surely beyond dispute
It presents itself today in its noblest aspect
namely the Christian duty
of helping fellow mortals in distress.
No city, no family
nor any honourable man or woman
can repudiate this duty
and accept from others
help which they are not prepared
to fit themselves to render
in return
Cartoon by CHRYS in the
NEWS OF THE WORLD
CHRYS

SIR WINSTON CHURCHILL
in his final speech as
Prime Minister to the
House of Commons

An Introduction to DISASTER NURSING

Condensed from a paper presented to a Nurses' Orientation Course at the Alberta Civil Defence School, in January 1963, by Miss Evelyn A. Pepper, Nursing Consultant, Federal Emergency Health Services.

Planning to ensure the survival of as large a proporiton of the civilian population as is possible in the event of a national disaster, has been in progress in Canada since 1951.

The support of a small nucleus of registered nurses trained in 1951 and the thousands who have since provided thoughtful enthusiasm for and effective action toward the program, is gratefully acknowledged.

Every professional nurse in Canada must know her country's and her community's plans for emergency health services and should fit herself to fulfil her expected role in the event of disaster. This is not only a belief—it is an opportunity to help solve a national problem—and Canadian nurses have seized that opportunity.

In Canada today there are approximately 62,000 registered nurses and 20,000 physicians. Over half of these professional persons live and work in our major cities. If our 16 main cities were devastated by nuclear attack, approximately fifty per cent of our 100,000 active treatment hospital beds would be destroyed. Health manpower could be similarly reduced unless greater survival percentages could be ensured through pre-attack planned evacuation.

If our cities are laid waste through enemy attack, casualties in unprecedented numbers will require life-saving care. It has been estimated that there would be 1,500,000 casualties in the first 48 hours from blast and heat. Within the following 14 days, another 4 or 5 million casualties would develop from radiation injury. Approximately 2 to 3 million of these could die from this cause. By the end of one month after the attack, millions of persons would be exposed to communicable diseases due to the inevitable breakdown of public health services. This is a stark statement of the situation which the surviving health-manpower population would have to face.

In conjunction with the Canadian Forces Medical Service, a casualty care plan has been developed by the Emergency Health Services (EHS). Following a disaster, re-entry operations into the target areas would be the responsibility of the Armed Services. Life-saving first aid would be provided at any site of rescue and the casualty moved out of the area for treatment at an Advanced Treatment Centre and more definative care in hospital. These latter medical units would be manned by civilian health personnel.

The great, and at first frightening, difference between peacetime and disaster nursing is focused on the present concept of "good nursing care". Under disaster conditions, we cannot concentrate on the individual patient. We must do the best we can for the greatest number of injured persons and do this with limited supplies. We must, for instance—

(a) Assume medical responsibility far beyond normal training,

(b) Perform life-saving techniques proficiently,

(c) Understand the psychological effects of disaster on survivors and be able to take steps to avoid panic,

(d) Give quick, on-the-scene instruction to lay people,

(e) Know what local hospital and community disaster plans are, in order that we may work within these plans.

Disaster nursing requires nurses to work at the maximum of their ability and to develop the following skills:

(a) Estimate the situation. This includes the mental appraisal of such factors as the numbers involved; the types of injuries, the possibility of assistance from others; the availability of supplies, warmth, shelter and nourishment.

(b) Set priorities for work. The needs of the injured persons must be met on a practical basis and EHS has established priorities for casualty care. These are:

IMMEDIATE — requiring on-the-spot, life-saving treatment. MINIMAL — requiring only first aid before evacuation or being put to work. DELAYED — persons whose injuries do not require life-saving treatment and who could be transported, with reasonable care, out of the disaster area for treatment. EXPECTANT—casualties whose life expectancy is absolutely minimal and to whom little but supportive morale and spiritual help can be given.

We have no reason to believe that the future offers the same degree of security that has kept Canada relatively free of large scale disaster in the past. We have had little experience in coping with widespread destruction and masses of injured people. If our country becomes the target for an aggressor, all nurses will have their life's work spelled out for them, working outside the luxury of hospital services and supplies. They must develop ABILITY to assume leadership, ABILITY to delegate responsibility, ABILITY to improvise, ABILITY to provide life-saving techniques, ABILITY to give on-the-job instruction, ABILITY to support and maintian morale and ABILITY to smile through it all. In such a situation, Canadian nurses would have one thing in common—all would be practising "disaster nursing".

BIOLOGICAL AGENTS IN FUTURE WARS

(Continued from page three)

Special techniques of rapid identification of organisms are being developed, one of the most recent is the use of the fluorescent anti-body technique in which organisms are seen to fluoresce under the ultra violet microscope when treated with the appropriate re-agent "tagged" with a fluorescent stain. A number of other highly technical methods are under investigation.

Planning for defence against biological agents must be closely integrated with the overall program for national Civil Defence. Some of the major problems which require attention are: the detection of the agent and the methods of early warning; methods of immunization and mass record keeping; provision of necessary public health supplies; use of antibiotics and chemotherapeutic drugs; and education of the public.

The most important single measure in defence against biological agents is the active immunization of the populace with available vaccines. Vaccines capable of providing sound immunity are available against many of the possible agents.

Broad spectrum antibiotics are effective against many of the bacterial agents but no adequate antibiotic therapy is as yet available for the majority of viral infections.

Education of the public in measures for the control of communicable diseases is essential. With adequate countermeasures the great majority of casualties can be expected to survive. We must aim at information, indoctrination of the population.

Biological warfare is feasible and it behooves each one of us in our civilian and military roles to be well informed of the potentialities of the many health hazards which may be used against us in future wars. When Aristotle was asked how much educated men were superior to those uneducated, he replied, "As much as the living are to the dead".

Alberta Region SURVIVAL CONFERENCE

More than 100 delegates, including senior Federal, Provincial and Armed Forces representatives met at Griesbach Barracks, Edmonton, on the weekend of February 16 and 17, to hear survival planning progress reports for 1962 and forecast of plans for 1963.

Brigadier G. C. Leech, Commander, Alberta Area, opened the conference and Minister in Charge, Alberta Emergency Measures, the Honorable L. C. Halmrast delivered the keynote address in which he stated that of Alberta's 306 municipalities, 202 have established Civil Defence Organizations and that 20,000 people have taken survival training in the province.

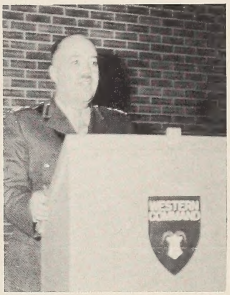
Speaking on the warning system, Major Bob Freeborn said that 65 sirens have so far been installed in Alberta and that plans call for a further 47 to be operational this year. Completion of the program would mean that Edmonton would have 29 sirens and Calgary 35.

Mr. Ralph Horley, Manager of the C.B.C., Edmonton, played a few minutes of a tape recording of the actual broadcast which will be made in the event of a nuclear attack, and stressed that only official announcements would be broadcast, commencing as soon as possible after the sounding of the alert warning.

In his closing remarks, Mr. Arnold Lavoie, Co-ordinator, Alberta EMO, spoke of the 18 basic plans which have been approved for provincial government departments and mentioned that a further five had been submitted for approval. Only 30 municipal plans had so far been produced of which 21 have geen given general approval.

Mr. Eric Atkins, Federal Representative, added his thanks to Brig. Leech and his staff and spoke of the excellent co-operation enjoyed between Army, Provincial and Federal agencies employed in survival planning in Alberta. He also announced that exercise "Tocsin 1963" would be held in the fall to test plans, with special emphasis on Resources Planning.

Leaders in the field of emergency health services got together at the conference. Left to right are Col. B. P. Karney, Command Dental Officer, Dr. Bob Duncan, Director of Alberta Emergency Health Services, his Nurse Consultant, Miss Kay Miller, Col. Max Fitch, Command Medical Officer and Dr. D. Matas, Federal Emergency Health Representative.



Brigadier G. C. Leech, Comlander Alberta Area who followed A. J. Lavoie and E. Atkins in making a closing address to conclude the conference.

An all-to-rare opportunity for an exchange of views occurred when officers in charge of Alberta's three zones, met at the conference. Left to right are Jack Stewart of Northern Zone, Jim Pringle, Southern Zone and Sam Dunbar of Peace River Zone. Zones were not required to make reports to the conference but C.D. Directors from the two target areas made brief reports.

Major Crawford Glew uses a map of the province to show the grid of Nuclear Detonation and Fallout Reporting Posts, already in operation.

OUR COVER

The idea for our cover was borrowed from a similar cover used on the January edition of Nova Scotia's Civil Defence Bulletin. Your assistance in plagiarizing material, especially cartoons, relating to Civil Defence would be appreciated by the editor.

ANGLICAN INTEREST

Almost 100 Anglican clergymen attended a one-day study in Civil Defence at Southgate, England, recently, the meeting being given considerable press and television covering.

Syndicates discussed problems with realism and sincerity and considered that it is undesirable for a priest to undertake a specific job, such as warden, in Civil Defence, but agreed that they might take courses in technical training to "convert them from well-wishing amateurs to efficient, mobile clergy".

The Lord Bishop of Newcastle summed up by saying: "Knowledge must be disseminated because education is a necessary part of our life. It must be accepted that nuclear power is today, part of our normal living and the possible but regrettable eventual risk is there."

GUESS

Canada has 307 radio and television stations. How many are privately, and how many state owned?

Ten years ago defence spending took 45.5 per cent of total federal budgetry expenditure. What is the proportion in the current year?

Answers—

259 are privately owned, 48 state owned.
It is estimated at 26.3 per cent.

Quick Canadian Facts—January, 1963.

SHELTERS?

When the skies are clear, no one is interested. Suddenly, when the clouds come—after all, we have no assurance that they will not come—then everybody wants to find out why more has not been done about it.

President Kennedy at a news conference.

RESCUE TRAINING

IMAGINATION **REALITY!**

Courtesy of "De Paladijn"

C.D. IN THE U.S.

Excerpts from the statement made before the House Armed Services Committee by Secretary of Defense Robert S. McNamara.

The decision was taken to make use of shelter space with protection factors of between 40 and 100 as a result of studies which showed that better than 90% of the occupants of shelters with a protection factor of 40 would have adequate protection against radiation intensities anticipated from attacks considered possible over the next few years.

Fifty eight thousand of the buildings covered by survey have been made available by their owners for public shelter use, without compensation. Of these, about 13,000 buildings capable of sheltering 10 million people have been marked. Both the licensing and marking of shelter space have been moving at a sharply accelerated pace since the Cuban emergency.

The major portion of this shelter space is located in urban areas and, allowing for the night-time, daytime and transient population requirements, would accommodate over half the urban population. The cost of surveying, marking and stocking these spaces averages about $3.30 per shelter space.

Through fiscal year 1963, $8.6 million was provided for NEAR to develop and test prototype generators and receivers and install six NEAR generators in selected utility systems for system-wide installation and final test evaluation.

More than 33,000 Federal, State and local stations have already been equipped with radiological monitoring instruments. Our goal for 1964 is to complete the equipping of an additional 40,000 surface monitoring stations, all of which will be capable of mobile, as well as fixed, station monitoring. Our ultimate goal is to equip 150,000 such stations.

Nearly 6,000 training instructors have graduated in the past year from the three civil defense schools, and specialists and instructors are now being trained at the rate of 8,000 per year. In addition, 19 training films in shelter management and radiological defense have been or will be soon completed, and will be distributed throughout the country.

As of January 1, 2,800 architects and engineers had completed the two-week course in fallout shelter analysis which is given in each of the eight civil defense regions.

During 1963 it is estimated that 700,000 persons will be trained in civil defense adult education courses given in all 50 states. This will bring the number so trained to more than 1.1 million. In 1964, it is estimated that an additional 1.0 million will attend these courses.

We have included $20.5 million in the 1964 program for training, education and public information. Major strides have been made in this area.

Blitz of Pieces

The last shall be verse

Do you ever wonder if it's worth while
When people take no heed?
When you talk in vain to a knowing smile
That won't acknowledge need?

Think of the lives you have saved so far,
By explaining a simple fact.
Recall the minds you have propped ajar,
The folks you've prepared to act.

Don't rest on your laurels, and yet rejoice,
That you have persuaded some.
That families that have heard your voice,
Will survive if war should come.

—J.D.